



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

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Insert date if approving delisting

Jan Eland, Vice President, Head of Global Technical Operations
Emerald Kalama Chemical, LLC
1499 SE Tech Center Place, Suite 300
Vancouver, WA 98683

Re: DRAFT Emerald Delisting and Treatment Variance Petitions Approved

Dear Jan Eland:

The Washington State Department of Ecology (Ecology) has received and reviewed Emerald Kalama Chemical, LLC's (Emerald) petition to delist up to 3,500 cubic yards of U019 (benzene) and U220 (toluene) industrial wastewater biological solids (IWBS) wastes annually from the list of federal hazardous and state dangerous wastes at Emerald's facility located at 1296 Third Street NW in Kalama, Washington 98625. Emerald submitted an identical petition at the same time to the United States Environmental Protection Agency (EPA) Region 10.

The EPA has primary authority for delisting hazardous wastes regulated by 40 Code of Federal Regulations (CFR) Part 261. Ecology cannot delist federally listed waste independently of the EPA. In cases of federally listed dangerous waste, Ecology may grant delisting exemptions to specific wastes upon petition from the generator only after EPA's approval of the delisting petition.

The EPA has approved the petition (insert link to final federal rule if approved) for delisting the U019 (benzene) and U220 (toluene) IWBS with specific requirements for maintaining the delisting exclusion. EPA approval of the delisting petition was published as a final rule on (date to be determined if petition is approved after public notice), and became effective on that date.

In accordance with the Dangerous Waste Regulations, Chapter 173-303, Washington Administrative Code (WAC), Ecology reviewed the petition and provided public notice of the request from January 20, 2022 to February 22, 2022, receiving (the number of comments will be updated after the public notice ends) comments. The comments and Ecology's response are documented in Appendix B of the final Fact Sheet (copy enclosed).

Your petition demonstrates that the IWBS wastes are not regulated as dangerous waste by the Washington State criteria of WAC 173-303-100.

Ecology grants your request to exempt the waste described in your petition from regulation as dangerous waste according to WAC 173-303-910(3). Ecology's approval is conditioned on Emerald's continued compliance with the EPA conditions for exclusion as described in the federal regulation regarding this delisting found at (insert link to final federal rule if approved). This includes sampling and meeting delisting exclusion limits for acetaldehyde, barium, benzaldehyde, benzene, benzoic acid, benzyl alcohol, cobalt, copper, formic acid, methanol, nickel, phenol, toluene, and zinc. In addition, Emerald must submit to Ecology any reports Emerald submits to the EPA as a condition of this delisting.

Additionally, Emerald also submitted a petition for a site-specific variance from the land disposal treatment standards for dangerous waste code U001 (acetaldehyde) in the IWBS wastes. The land disposal restrictions in the dangerous waste rules require dangerous wastes to meet certain treatment levels before being disposed in a landfill (WAC 173-303-140 and by reference 40 CFR 268.40). Treatment levels are either concentration-based or technology-based standards. The state dangerous waste regulations include provisions that allow a facility to petition for a variance of the land disposal treatment standards (WAC 173-303-140(2) and by reference 40 CFR 268.44(h)-(m)). Ecology is authorized to make decisions independent of EPA on petitions requesting site-specific variances of the land disposal treatment standards. Thus, Emerald only submitted a petition for approval from Washington State for the treatment variance petition.

Emerald provided information in the treatment variance petition to show why the combustion treatment standard is not appropriate for the IWBS wastes. As noted in Emerald's treatment variance petition, Emerald's wastewater treatment plant provides a viable and proven treatment method for organic chemicals, including acetaldehyde. Ecology agrees that it is not necessary, nor is it technically appropriate to treat the IWBS by combustion, as the potentially discarded acetaldehyde that may be present in the wastewater entering the wastewater treatment plant would likely be present in very low concentrations. The IWBS that are produced in the wastewater treatment plant are essentially the dead and decaying microorganisms used to digest the influent wastewater and thereby chemically transform the undesirable components present in the wastewater into benign compounds. The IWBS are unlikely to contain acetaldehyde at a concentration that would be harmful to human health or the environment.

The IWBS are mainly water (about 90%) and likely would need to be de-watered before being incinerated. Removing water would require a considerable amount of energy that would likely have a negative impact on the environment. Also, the potential negative environmental impact of emissions from transporting the wastes to an incinerator would be significant based on truck and train emissions. For these reasons, Ecology believes the combustion treatment standard for the IWBS waste is technically inappropriate.

Ecology grants your request to exempt the IWBS waste described in your petition from regulation of the land disposal treatment standards for U001 (acetaldehyde). Ecology's approval is conditioned on Emerald's continued compliance with the following requirements:

- 1) Emerald must sample the IWBS wastes for acetaldehyde using the Toxicity Characteristic Leaching Procedure (TCLP) analysis by collecting a representative grab sample of IWBS once every quarter for eight quarters. Quarterly sampling periods are January through March, April through June, July through September, and October through December.
- 2) Emerald must begin quarterly acetaldehyde monitoring for the quarter beginning on (date to be determined if treatment variance is approved after public notice).
- 3) Emerald must include this sampling as part of the written sampling plan required by the EPA conditions for exclusion for delisting as described in the federal regulation.
- 4) Sample results in the IWBS wastes must meet the alternative treatment standard for acetaldehyde, which Ecology developed from EPA's Delisting Risk Assessment Software model. The alternative treatment standard is 8.65 mg/L. This alternative treatment standard is based on the TCLP analysis in the model is sufficient to minimize threats to human health and the environment posed by land disposal of the waste (40 CFR 268.44(m)).
- 5) For each roll-off box of IWBS wastes that exceeds the alternative treatment standard for acetaldehyde, Ecology will require Emerald to meet the original technology-based standard of high temperature organic destruction ("CMBST" as shown in 40 CFR 268.40 under U001 for acetaldehyde), such as combustion, for that roll-off box.
- 6) If after eight quarters of sampling for acetaldehyde and Emerald has not exceeded the alternative treatment standard, Emerald may reduce sampling of acetaldehyde to twice per year (once between January and June and once between July and December).
- 7) If Emerald exceeds the alternative treatment standard at any point, Emerald must stay at or revert back to quarterly sampling. If an exceedance of the alternative treatment standard occurs during the reduced twice per year frequency, Emerald must begin quarterly sampling at the start of the next quarter. If Emerald exceeds the alternative treatment standard in two consecutive sampling events, Ecology may require more frequent than quarterly sampling for acetaldehyde to better define how many roll-off boxes exceed the alternative treatment standard.
- 8) Emerald may use acetaldehyde sampling required by the EPA's conditions for exclusion to fulfill the sampling requirements described in this letter. These requirements are available in the federal regulation, which delists Emerald's IWBS as a listed hazardous waste. Ecology does not currently accredit any laboratory for analysis of acetaldehyde in samples of solid material. Therefore, samples for acetaldehyde may be analyzed by a laboratory that otherwise holds accreditation for the other analytes to be sampled under EPA's delisting conditions for exclusion.

- 9) Emerald must submit to Ecology by January 15th of every year the previous year's acetaldehyde sampling results.

Ecology notes that this LDR treatment variance is only for U001. Emerald must meet the applicable land disposal restrictions for the IWBS for U019, U154, U220, and F003 (40 CFR 268.40).

Please contact Greg Gould in Ecology's Industrial Section at (360) 407-6934 or greg.gould@ecy.wa.gov, with any questions or concerns.

Sincerely,

James DeMay, P.E.
Industrial Section Manager
Solid Waste Management Program

Enclosures

cc: Phil Oyer, Emerald
Jonathan Thompson, Attorney General's Office
Greg Gould, Ecology
Steve Moore, Ecology
Dave Bartus, EPA